C61.30:M58

Michigan Exports

STATE EXPORT SERIES

U.S. DEPARTMENT OF COMMERCE
International Trade Administration
Washington, D.C. 20230
August 1984

An ITA
Publication

EXPORTS...

. . . their importance to the United States economy

Exports play an important role in our economy and in the increasingly interdependent world economy. The United States is the world's largest exporter— currently selling $200 billion of U.S. goods abroad— and is the world's largest economy. With 5 percent of the world's population, our country produces 24 percent of the world's industrial goods.

Exporting provides a broader marketing base for U.S. firms and is considerably more important than many Americans realize. Exports currently account for 5 million jobs in the United States. On average, 25,000 jobs are generated per $1 billion of U.S. merchandise exports.

Many jobs depend on exports

Employment generated by exports is much greater than the number actually employed in producing the final products shipped abroad. Exports create a large demand for employment that spreads throughout our economy. This includes all the jobs needed to produce goods and services supplied to export producers, the jobs needed by the export producers to produce exports, and the jobs needed to move products to our ports or borders for transport to other countries.

Most of the export-related jobs are in manufacturing and services. According to the latest estimates, 49 percent of the jobs are in manufacturing, 37 percent in services, and 14 percent in production of nonmanufactured goods. The importance of export employment varies among the industries. About one out of every eight Americans currently employed in manufacturing is dependent on exports of manufactured goods. About one out of every six jobs producing nonmanufactured goods and one out of 24 jobs in services are export-related.

Exports affect production and employment in all industries, not just in a few major export industries. For example, while the primary metals industries directly export about $6 billion of their products annually, an additional $21 billion of steel and other metals are exported in the form of American-made computers, aircraft, tractors, and other manufactured goods.

Exports are of great importance to America's farmers as well. They account for $1 of every $4 of farm sales. Likewise, many jobs in the coal mining and mineral industries, as well as a considerable number in the fishing industry, are dependent on overseas sales. Exports also support employment in the trucking, rail transport, insurance, and other service industries.

Exports essential

But the basic importance of exports is that they are the principal means by which America pays for its purchases from foreign countries. The United States imports proportionately far less than other major countries, but imports have become increasingly important to the American standard of living— and they have to be paid for. The other major industrial nations generally cover the cost of the goods they import by their exports. Merchandise exports and imports each account for an average of about 20 percent of the gross national product in that group of countries. American exports, however, were only 5.9 percent of GNP in 1983, while the ratio of imports to GNP stood at 7.8 percent. This gap between exports and imports is the trade deficit, which amounted to $57.6 billion in 1983.

The strength of our exports means a great deal to America. Exports are important to all the 50 states, and each state plays a significant role in meeting the need to export more. This report helps explain that role and shows the significance of exports in relation to employment and production.

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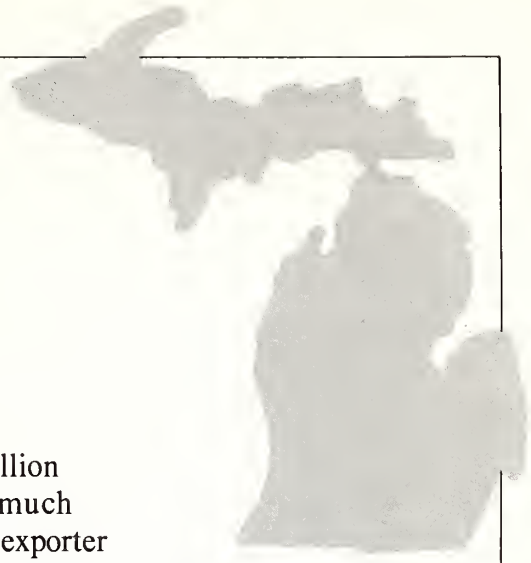
Michigan Export Highlights



Michigan's exports of manufactured goods totaled $10.3 billion in 1981, one and a half times the 1977 level. Exports grew much faster than production. The state was the second leading U.S. exporter of transportation equipment.

An estimated 74,400 jobs in Michigan were directly related to producing manufactured exports in 1981. About 68,400 additional jobs were required to produce materials and parts for incorporation in products exported from the 50 states. Thus, 142,800 jobs in Michigan were dependent on exports of manufactured goods—about one of every seven manufacturing jobs in the state.

Michigan's share of U.S. agricultural exports totaled $753 million in FY 1982, more than two times the FY 1977 value. In Michigan's farm sales, $1 out of every $4 came from exports.

Fifth in manufactures exports

Michigan was the fifth ranking U.S. exporter of manufactured goods to foreign countries in 1981. Exports totaled $10.3 billion, 48 percent greater than in 1977. Shipments from Michigan firms rose only about one-fourth as rapidly as exports during 1977 to 1981.

Transportation equipment was Michigan's largest export, accounting for more than half the 1981 total. Other major exports were nonelectric machinery, fabricated metal products, and chemicals.

Michigan ranked first nationally in exports of fabricated metals, and second in transportation equipment, apparel/textile products, and furniture/fixtures.

Exports of transportation equipment—primarily motor vehicles and parts—totaled $5.6 billion in 1981, more than one-third above the 1977 value. Michigan's production of this equipment increased only one percent while exports increased 37 percent from 1977 to 1981. In 1981, those sales were responsible for 12.7 percent of the state's output. An estimated 32,300 jobs were directly related to exports.

Foreign sales of nonelectric machinery rose to $1.8 billion in 1981, 86 percent above the 1977 level. Michigan's production of this machinery rose by 40 percent. Since exports grew much faster, they accounted for nearly one-quarter of the increase in total output. These exports represented 14 percent of the state's output in 1981, and provided jobs for an estimated 15,400 workers.

Exports of fabricated metal products increased 63 percent from 1977 to a total of $837 million in 1981. An estimated 9,200 jobs were directly related to exports. About nine percent of production was sold overseas.

The state's economy benefits from goods produced not only for direct shipment to foreign destinations but also from those for ultimate export through other states. Tables 6 to 8 show Michigan's export figures for manufactures including the output of supplying establishments that furnish parts and materials to manufacturers producing goods in final form for export. Such indirect exports are particularly important in industries whose products require further processing such as primary metals, fabricated metal products, and chemicals, and also in those industries whose products constitute components and parts for assembly into machinery, electric equipment, and transportation equipment.

The Census Bureau has estimated that the full impact of U.S. exports on Michigan's manufacturing activity was 14.7 percent rather than the 9.8 percent attributable to direct exports as shown in Table 3. Thus, of the expanded manufacturing output generated between 1977 and 1981, 40 percent—or $1

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Explanatory Notes

State export statistics presented in this report are estimates, in contrast to national export statistics, which are compiled from export documents prepared at the time goods leave the country. This note considers the reasons for, and consequences of, that difference.

Export estimates for each state are needed in order to measure the relative impact throughout our nation of changes in goods sold abroad. National export data are compiled each month in detail by types of goods sold and summarized in large commodity aggregates and overall totals—but in order to measure exports by each state of origin, which is not identified in shippers' export documents, special studies are necessary.

This report—one in a series of reports for each state—brings together state export estimates from studies by various U.S. Government agencies on manufactured goods, agricultural products, fishery products, and selected minerals. Overall totals for all goods exported from each state are not shown since these studies differ in methodology, frequency, export valuation, and U.S. geographic coverage, and the manufactures and agricultural studies somewhat overlap the products covered.

Manufactured Exports in this report relate to manufactures as defined in the Standard Industrial Classification (SIC) and include manufactured food, mineral fuel products, fats, oils, firearms, and ammunition not typically part of the Standard International Trade Classification (SITC) definition of manufactures. For the United States as a whole, exports of these additional products totaled $28.5 billion in 1981. Exports, normally valued at the port of exportation, are adjusted to f.o.b. plant values to make accurate comparisons with production (shipments) data.

The state estimates for manufactured goods are based on surveys of manufacturers conducted by the Industry Division of the Bureau of the Census. These studies are for selected years; cover the continental United States, Alaska, and Hawaii; and present data classified by the 20 major SIC industry groups (2-digit). Tables 1 to 3 show the value of state exports and state production, and the number of workers employed in manufacturing plants producing the finished goods for direct shipment to foreign destinations.

State economies also benefit from manufactured goods produced for ultimate export through other states, and from jobs related to manufactured exports which are generated in nonmanufacturing industries. In the table below, percentages show the full impact of export-related manufactures on state employment. Tables 6 to 8 show the percent of production and the value of state export-related manufactures—direct exports plus indirect exports or the value of materials and parts incorporated in products exported from elsewhere in the nation—and the number of state export-related workers employed in manufacturing plants producing these goods. Table 8 also shows the total number of workers related to manufactured exports—in manufacturing plus the number in nonmanufacturing industries supporting manufactured exports by supplying materials or services such as forwarding, warehousing, transport, and other foreign trade-related services.

Agricultural Exports relate to food products other than those from marine sources, unmanufactured tobacco, and other agricultural products simply processed such as fibers, raw hides and skins, fats and oils, wine and beverages other than distilled types.

The state estimates for agricultural exports are from studies prepared by the U.S. Department of Agriculture. Exports reflect shares in national exports according to each state's production and sales data. Export values were obtained by multiplying each state's share of farm production by commodity times the total export value for each of the respective commodities. These annual studies are for fiscal years ending September 30 and for all states except Alaska, and show data classified by 18 commodity groups. Tables 4 and 5 show the value of state exports and the percent of farm sales.

Other Exports—Fishery products, various minerals, and fuel export estimates shown in the Highlights on page 1 for selected states are from studies prepared by the National Oceanic and Atmospheric Administration (NOAA), the U.S. Department of Interior, and the U.S. Department of Energy, respectively. Exports generally reflect shares in national exports according to state production.

Annual Exports and Employment Related to Manufactured Exports

	Manufactured exports	Manufacturing employment		Total employment, including nonmanufacturing employment	
	(million dollars)	(thousands)	Percent of manufacturing employment	(thousands)	Percent of civilian employment
Michigan *					
1976	6,374	144.3	13.8	188.3	5.3
1977	6,937	132.7	11.9	194.5	5.3
1980	8,764	147.5	14.5	226.2	5.8
1981	10,275	142.8	14.6	218.9	5.7
United States					
1976	83,098	2,125.4	11.3	3,452.1	4.0
1977	85,796	1,990.2	10.2	3,258.2	3.6
1980	151,216	2,639.3	12.8	4,808.3	4.8
1981	164,283	2,603.8	12.8	4,794.0	4.7

* Michigan's export-related manufactures were as follows in million dollars: 1976, 10,209; 1977, 10,975; 1980, 13,495; and 1981, 15,512. About 40 percent of the increase in Michigan's manufacturing production from 1977 to 1981 was generated by growth in export-related manufactures.

TABLE 1

Michigan Manufactured Exports, Production, and Employment, 1981

- Michigan's leading manufactured exports were transportation equipment, nonelectric machinery, and fabricated metals.
- These three industries accounted for 81 percent of Michigan's total exports of manufactures.

Industry group	Production (million dollars)	Estimated exports (million dollars)	Exports as percent of production	Estimated employment related to exports (thousands)	Employment related to exports as percent of total employment
Total[1]	105,175	**10,275**	9.8	74.4	7.6
Transportation equipment	44,388	**5,625**	12.7	32.3	13.2
Machinery, except electric	12,790	**1,832**	14.3	15.4	10.8
Fabricated metal products	9,665	**837**	8.7	9.2	8.1
Chemicals and allied products	5,159	**577**	11.2	3.0	10.2
Electric and electronic equipment	2,807	**326**	11.6	3.9	11.1
Apparel and textile products	1,552	**212**	13.7	2.2	12.3
Primary metal industries	7,117	**177**	2.5	1.7	2.7
Food and kindred products	7,545	**174**	2.3	0.7	1.6
Instruments and related products	877	**122**	13.9	1.5	11.6
Stone, clay, and glass products	1,574	**99**	6.3	1.1	6.9
Rubber and plastic products	1,547	**81**	5.2	0.7	3.3
Furniture and fixtures	1,826	**62**	3.4	0.6	2.5
Misc. manufacturing industries	544	**39**	7.2	0.5	5.0
Printing and publishing	1,996	**29**	1.5	0.3	0.8
Lumber and wood products	681	**20**	3.0	0.2	1.6
Paper and allied products	2,808	**16**	0.6	0.1	0.5
Petroleum and coal products	1,917	**14**	0.7	([2])	--
Textile mill products [3]	151	**8**	5.5	0.1	3.3
Leather and leather products [3]	167	**8**	4.9	([2])	--
Tobacco manufactures	([1])	**([1])**	--	([1])	--

[1] Total includes estimated exports, production values, and employment numbers which are withheld for certain industry groups to avoid disclosure of individual companies' data. [2] Less than 50 employees. [3] 1980. -- Not applicable.

TABLE 2

Michigan Growth in Manufactured Exports

- In 1981, Michigan's manufactured exports totaled $10.3 billion, one and a half times the 1977 value.
- Nearly three-fourths the increase stemmed from growth in transportation equipment and nonelectric machinery exports.

Industry group	Export value (million dollars)					Percent increase from 1977 to 1981		Export increase as percent of production increase 1977-81
	1960	1969	1972	1977	1981	Exports	Production	
Total	936	2,613	3,522	6,937	**10,275**	48	12	29
Transportation equipment	453	1,418	1,736	4,107	**5,625**	37	1	100+
Machinery, except electric	178	474	464	986	**1,832**	86	40	23
Fabricated metal products	28	190	312	514	**837**	63	3	100+
Chemicals and allied products	92	142	180	404	**577**	43	37	12
Electric and electronic equipment	30	82	131	188	**326**	73	36	19
Apparel and textile products	4	10–25	(1)	79	**212**	170	–12	100+
Primary metal industries	55	109	126	196	**177**	–10	1	0
Food and kindred products	39	50	61	153	**174**	13	35	1
Instruments and related products	11	18	28	63	**122**	92	62	17
Stone, clay, and glass products	11	27	49	76	**99**	31	9	18
Rubber and plastic products	7	13	35	62	**81**	30	–14	100+
Furniture and fixtures	2	1–5	(1)	21	**62**	195	66	6
Misc. manufacturing industries	16	35	(1)	20	**39**	91	18	23
Printing and publishing	1	1–5	(1)	9	**29**	232	35	4
Lumber and wood products	3	10–25	(1)	12	**20**	67	–(1)	100+
Paper and allied products	4	13	17	29	**16**	–44	39	0
Petroleum and coal products	(1)	1	(1)	4	**14**	276	77	1
Textile mill products	2	1–5	(1)	9	**8**[3]	–6[4]	–23[4]	--
Leather and leather products	1	5–10	(1)	3	**8**[3]	215[4]	17	23
Tobacco manufactures	(5)	0–1	(1)	(1)	**(1)**	--	--	--

[1] Not available. [2] Less than one half of one percent. [3] 1980 [4] 1977-1980. [5] Less than $500,000. -- Not applicable.
Note: Totals for all years include values for industry groups which are not shown separately.

TABLE 3

United States Manufactured Exports by State

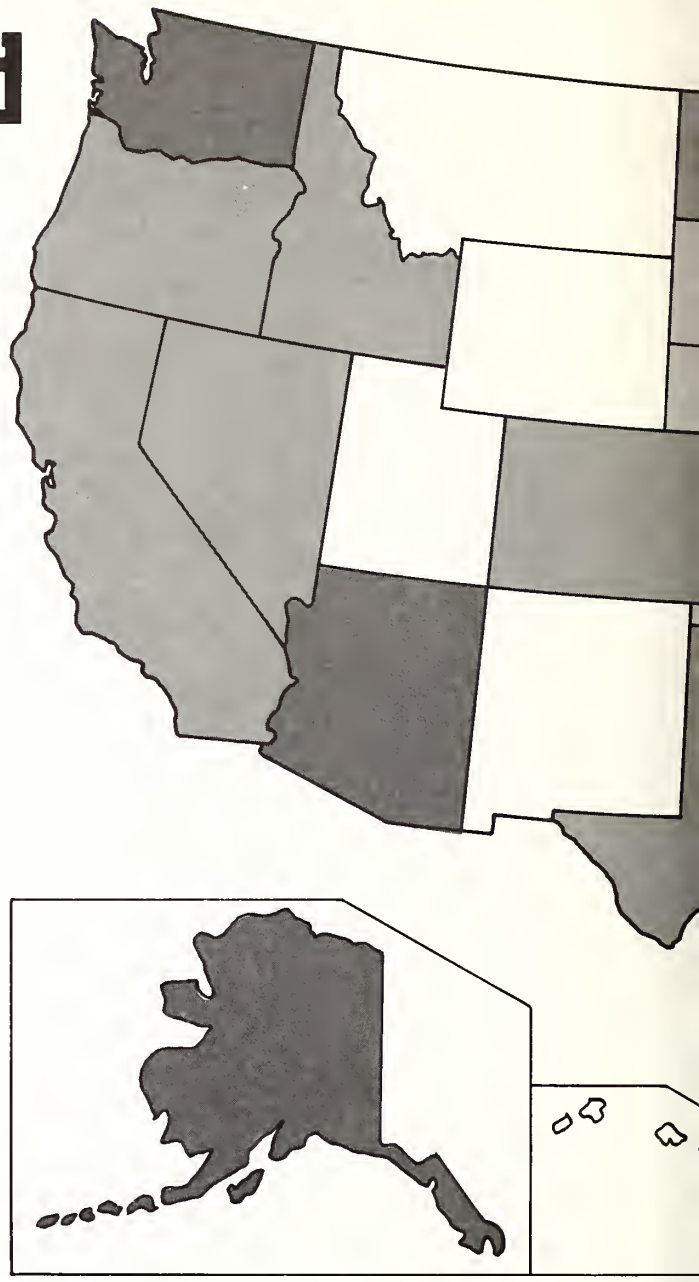
- California, Texas, Illinois, Ohio, and Michigan continued to be the top five exporters of manufactures in 1981.
- Manufactured exports totaled $2 billion or more for almost half of the 50 states.

State	Rank as exporter in 1981	Export value (million dollars)				Percent increase from 1977 to 1981	Estimated exports as percent of state production	Employment related to exports as percent of state employment
		1969	1972	1977	1981			
U.S., total	--	**29,210**	**36,608**	**85,796**	**164,283**	**91**	**8.1**	**7.3**
California	1	2,721	2,809	9,116	18,775	106	9.8	9.7
Texas	2	1,468	1,982	5,386	11,687	117	6.5	7.2
Illinois	3	2,343	2,902	6,313	10,369	64	8.2	6.9
Ohio	4	2,338	3,054	6,028	10,353	72	8.5	7.9
Michigan	**5**	**2,613**	**3,522**	**6,937**	**10,275**	**48**	**9.8**	**7.6**
New York	6	2,296	2,795	5,833	10,155	74	8.5	6.5
Washington	7	954	1,781	2,805	9,023	222	24.5	21.9
Pennsylvania	8	1,902	2,351	4,714	8,129	72	7.1	6.9
Massachusetts	9	818	920	2,310	5,096	121	10.6	8.6
Indiana	10	998	1,404	2,942	5,008	70	7.1	7.0
North Carolina	11	739	705	2,291	4,682	104	7.5	5.0
New Jersey	12	1,114	1,328	2,881	4,469	55	6.1	5.8
Wisconsin	13	785	916	2,132	4,031	89	7.4	7.4
Louisiana	14	396	541	1,494	3,725	149	6.4	6.6
Florida	15	426	567	1,583	3,352	112	9.1	6.6
Virginia	16	581	716	1,573	3,344	113	9.3	6.7
Tennessee	17	472	679	1,501	3,285	119	8.0	5.6
Connecticut	18	659	848	1,662	3,083	85	10.2	8.2
Missouri	19	634	577	1,682	3,013	79	7.3	6.2
Minnesota	20	492	654	1,605	2,730	70	7.7	7.1
Iowa	21	412	590	1,578	2,705	71	8.1	8.2
Georgia	22	428	580	1,419	2,505	76	5.3	4.8
South Carolina	23	254	312	1,150	2,230	94	8.0	5.5
Alabama	24	318	287	895	1,936	116	6.3	5.5
Kentucky	25	345	451	1,354	1,935	43	6.4	5.1
Oregon	26	240	237	906	1,724	90	9.2	9.0
Arizona	27	157	266	680	1,639	141	13.1	15.4
Arkansas	28	204	320	626	1,604	156	8.7	6.1
Kansas	29	241	283	689	1,517	120	5.7	7.6
Oklahoma	30	158	252	639	1,515	137	6.0	7.3
Colorado	31	157	245	668	1,283	92	7.5	8.6
Maryland	32	362	314	634	1,219	92	5.7	5.3
West Virginia	33	235	295	438	1,199	174	10.0	6.1
Mississippi	34	181	236	718	1,159	61	5.9	4.6
Nebraska	35	100	134	328	945	188	6.1	6.3
Alaska	36	33-48	(1)	374	653	75	33.4	32.5
New Hampshire	37	74	103	290	637	120	8.8	8.9
Rhode Island	38	110	107	297	586	98	7.7	6.8
Maine	39	77	83	232	498	114	5.5	5.6
Idaho	40	35	27	246	460	87	9.2	6.8
Utah	41	48	127	173	449	159	4.6	5.8
Delaware	42	124	128	155	375	142	4.1	3.7
Vermont	43	52	52	183	229	25	6.3	6.0
South Dakota	44	13	(1)	95	185	96	6.3	4.5
North Dakota	45	7	14	73	156	114	6.6	7.9
Nevada	46	10-25	7	31	105	238	6.8	5.1
Hawaii	47	10-25	(1)	26	96	265	2.7	2.3
New Mexico	48	16	18	37	64	73	2.0	0.9
Montana	49	14	(1)	59	61	4	1.4	1.8
Wyoming	50	1-5	(1)	6	18	192	0.6	--

[1] U.S. total includes values withheld to avoid disclosure for individual companies or because estimate did not meet publication standards. -- Not applicable.

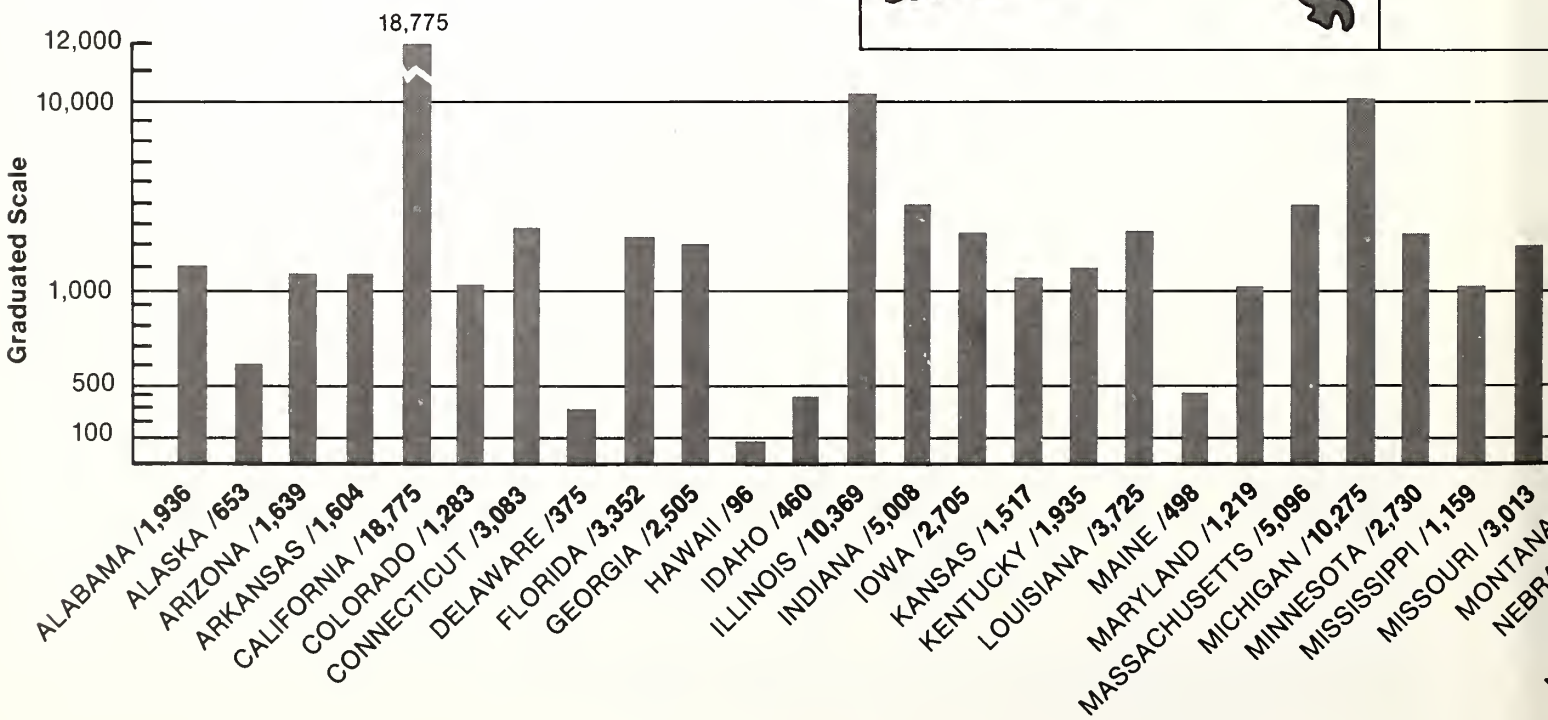
U.S. Manufactured Exports by State

- All 50 states shared in U.S. exports of manufactures.
- Exports accounted for varying percentages of domestic production



Estimated Value of Exports of Manufactures, 1981

(in millions of dollars)



Estimated Exports as Percent of Production, 1981 (Indicated by shading)

0.6% to 4.9%

5.0% to 6.4%

6.5% to 9.9%

10% or more

(in millions of dollars)

12,000

10,000

1,000

500

100

Graduated Scale

45

ADA /**105**

AMPSHIRE /**637**

NEW JERSEY /**4,469**

NEW MEXICO /**64**

NEW YORK /**10,155**

NORTH CAROLINA /**4,682**

NORTH DAKOTA /**156**

OHIO /**10,353**

OKLAHOMA /**1,515**

OREGON /**1,724**

PENNSYLVANIA /**8,129**

RHODE ISLAND /**586**

SOUTH CAROLINA /**2,230**

SOUTH DAKOTA /**185**

TENNESSEE /**3,285**

TEXAS /**11,687**

UTAH /**449**

VERMONT /**229**

VIRGINIA /**3,344**

WASHINGTON /**9,023**

WEST VIRGINIA /**1,199**

WISCONSIN /**4,031**

WYOMING /**18**

United States total 164,283

TABLE 4

Michigan Agricultural Exports*

- In fiscal 1982, Michigan's share of U.S. agricultural exports totaled $753 million, two and a third times the 1977 value.
- Feed grains were the leading farm exports from the state.

Product	Estimated exports (million dollars)				Percent increase 1977 to 1982
	FY 1968	FY 1972	FY 1977	FY 1982	
Total	92	107	318	**753**	137
Feed grains and products	13	19	104	**248**	138
Vegetables and preparations	9	24	32	**151**	377
Wheat and products	35	13	53	**123**	134
Soybeans and products	8	19	52	**123**	138
Fruits and preparations	9	5	10	**29**	195
Dairy products	3	6	8	**16**	115
Meats and products	2	2	8	**15**	89
Hides and skins	2	4	14	**10**	-34
Fats, oils, and greases	3	3	7	**7**	-7
Poultry and products	(2)	1	2	**4**	105
Nuts and preparations	(1)	(1)	(1)	**(2)**	--
Other products	8	10	29	**27**	-6

* Exports reflect shares in national exports according to each state's production.
[1] Not available. [2] Less than $500,000. -- Not applicable.

TABLE 5

United States Agricultural Exports* by State

- Exports accounted for over one fourth of total U.S. farm sales in FY 1982 and for more than 25 percent of sales from 20 of the states.
- Illinois, Iowa, California, and Texas each exported more than $2 billion of farm products.

State	Rank as exporter FY 1982	Export value (million dollars)				Percent increase FY 1977 to FY 1982	Exports as percent of farm sales[1] FY 1982
		FY 1968	FY 1972	FY 1977	FY 1982		
U.S., total	--	[2]6,315	8,050	24,013	[2]39,094	63	27.5
Illinois	1	585	758	2,539	3,306	30	43.3
Iowa	2	392	620	2,042	3,026	48	28.9
California	3	413	592	1,774	2,854	61	20.6
Texas	4	551	456	1,761	2,569	46	25.4
Minnesota	5	226	347	918	1,883	105	29.4
Nebraska	6	230	283	988	1,808	83	26.4
Kansas	7	296	365	998	1,628	63	29.3
Indiana	8	252	384	1,319	1,559	18	36.6
Missouri	9	174	317	766	1,404	83	34.4
North Dakota	10	166	250	554	1,326	149	50.7
Arkansas	11	255	352	907	1,283	41	39.2
North Carolina	12	366	420	964	1,247	29	29.8
Ohio	13	194	262	957	1,052	10	31.6
Washington	14	152	163	414	946	129	33.0
Mississippi	15	164	230	648	787	21	35.8
Oklahoma	16	115	108	410	781	90	26.9
Michigan	**17**	**92**	**107**	**318**	**753**	**137**	**28.2**
Kentucky	18	69	132	473	731	55	24.7
Georgia	19	132	173	476	706	48	21.7
South Dakota	20	95	124	210	655	212	23.8
Louisiana	21	155	191	543	626	15	37.4
Colorado	22	63	98	239	612	156	19.6
Wisconsin	23	59	104	263	592	125	11.9
Tennessee	24	102	143	390	590	51	31.0
Florida	25	101	148	390	586	50	14.2
Montana	26	107	101	322	559	74	37.9
Idaho	27	66	91	262	551	110	24.6
Alabama	28	56	102	332	481	45	21.7
Oregon	29	49	65	182	423	132	24.1
South Carolina	30	107	135	312	407	30	35.6
Arizona	31	61	70	285	404	42	23.3
Virginia	32	80	92	225	384	71	23.5
Pennsylvania	33	65	42	137	246	79	8.3
New York	34	63	44	109	214	96	8.2
Maryland	35	35	41	136	188	39	17.9
New Mexico	36	24	28	82	121	48	13.6
Wyoming	37	8	16	38	95	154	15.8
Utah	38	14	19	55	80	45	14.7
Delaware	39	15	14	53	73	38	18.5
New Jersey	40	19	11	38	65	72	13.9
Hawaii	41	16	17	59	41	-30	8.4
Maine	42	6	5	28	28	1	6.5
Massachusetts	43	5	6	12	24	105	7.6
Nevada	44	2	4	10	22	118	10.5
West Virginia	45	6	4	11	22	97	9.5
Connecticut	46	8	12	22	15	-32	4.6
Vermont	47	2	4	3	8	138	1.9
New Hampshire	48	1	1	2	4	89	3.6
Rhode Island	49	[3]	[3]	1	1	11	3.1
Alaska	50	[4]	[4]	[5]	[4]	--	--

* Exports reflect shares in national exports according to each state's production. [1] Commercial sales plus net Commodity Credit Corporation loans and purchases under price support programs. [2] Includes exports that were not apportioned among states. [3] Less than $500,000. [4] Not available. [5] Less than $100,000. -- Not applicable.

TABLE 6

Michigan Manufactured Production, Export-Related Manufactures and Employment, 1981

- About 1 out of 7 Michigan jobs in manufacturing are due to exports.
- Three industries—transportation equipment, nonelectric machinery, and fabricated metals—accounted for 58 percent of Michigan's export-related jobs in manufacturing.

Industry group	Production (million dollars)	Export-related manufactures (million dollars)	Export related as percent of production	Employment for export-related manufactures (thousands)	Employment for export related as percent of total employment
Total[1]	105,175	15,512	14.7	142.8	**14.6**
Transportation equipment	44,388	6,843	15.4	39.0	**15.9**
Machinery, except electric	12,790	2,599	20.3	24.5	**17.2**
Fabricated metal products	9,665	1,756	18.1	19.7	**17.4**
Primary metal industries	7,117	1,232	17.3	11.0	**17.5**
Chemicals and allied products	5,159	923	17.8	5.1	**17.2**
Electric and electronic equipment	2,807	430	15.3	5.5	**15.7**
Food and kindred products	7,545	330	4.3	1.6	**3.6**
Apparel and textile products	1,552	255	16.4	2.7	**15.0**
Paper and allied products	2,808	236	8.3	1.8	**8.2**
Stone, clay, and glass products	1,574	182	11.5	1.9	**11.9**
Rubber and plastic products	1,547	181	11.6	2.1	**9.8**
Instruments and related products	877	148	16.8	1.9	**14.7**
Petroleum and coal products	1,917	108	5.6	0.1	**5.2**
Furniture and fixtures	1,826	76	4.1	0.8	**3.3**
Lumber and wood products	681	66	9.6	1.0	**8.0**
Printing and publishing	1,996	57	2.8	0.8	**2.1**
Misc. manufacturing products	544	46	8.3	0.6	**5.9**
Textile mill products[2]	151	16	10.7	0.3	**9.9**
Leather and leather products[2]	167	12	7.0	([3])	**([4])**
Tobacco manufactures	([1])	([1])	—	([1])	**—**

[1] Total includes production and export-related values, and employment numbers which are withheld for certain industry groups to avoid disclosure of individual companies' data. [2] 1980. [3] Less than 50 employees. [4] Less than one half of one percent.

TABLE 7

Michigan Growth in Export-Related Manufactures

- The 41 percent growth in the value of export-related manufactures from 1977 to 1981 was much faster than the rate of expansion in production.
- Export growth exceeded production by more than 100 percent in six industries. Almost one-third of the increase in nonelectric machinery production and one quarter of the rise in chemicals output was generated by growth in export-related manufactures.

Industry group	Export-related manufactures (million dollars)		Percent increase from 1977 to 1981		Export-related increase as percent of production increase 1977-81
	1977	1981	Export related	Production	
Total	10,975	15,512	41	12	**40**
Transportation equipment	5,105	6,843	34	1	**100+**
Machinery, except electric	1,483	2,599	75	40	**30**
Fabricated metal products	1,349	1,756	30	3	**100+**
Primary metal industries	1,118	1,232	10	1	**100+**
Chemicals and allied products	606	923	52	37	**23**
Electric and electronic equipment	271	430	59	36	**22**
Food and kindred products	228	330	45	35	**5**
Apparel and textile products	132	255	93	-12	**100+**
Paper and allied products	142	236	66	39	**12**
Stone, clay, and glass products	130	182	40	9	**40**
Rubber and plastic products	160	181	13	-14	**100+**
Instruments and related products	78	148	88	62	**21**
Petroleum and coal products	25	108	332	77	**10**
Furniture and fixtures	30	76	150	66	**6**
Lumber and wood products	45	66	46	-([3])	**100+**
Printing and publishing	24	57	137	35	**6**
Misc. manufacturing industries	26	46	74	18	**24**
Textile mill products	16	16[1]	2[2]	-23[2]	**100+[2]**
Leather and leather products	5	12[1]	136[2]	17[2]	**28[2]**

[1] 1980. [2] 1977-1980. [3] Less than one half of one percent.
Note: Totals include values for industry groups which are not shown separately.

TABLE 8

United States Export-Related Manufactures and Employment by State

- California, New York, Texas, Pennsylvania, and Ohio led the states with the largest number of jobs related to manufactured exports.
- Employment rates were highest in Connecticut, Washington, Ohio, and Delaware for jobs in all industries related to manufactured exports.

State	Rank as export related in 1981	Export-related manufactures: 1977 (million dollars)	Export-related manufactures: 1981 (million dollars)	Percent increase from 1977 to 1981	Percent of state production 1981	Employment for export related as percent of manufacturing employment	Total employment related to manufactured exports: (thousands)	Total employment related to manufactured exports: Percent of civilian employment
U.S., total	--	**142,404**	**271,703**	**91**	**13.4**	**12.8**	**4,794.0**	**4.7**
California	1	13,319	27,399	106	14.2	14.5	526.5	4.7
Texas	2	9,196	22,651	146	12.5	12.7	285.5	4.2
Ohio	3	11,047	18,132	64	14.8	14.7	284.0	6.2
Illinois	4	10,216	17,039	67	13.4	12.9	275.4	5.4
Michigan	**5**	**10,975**	**15,512**	**41**	**14.7**	**14.6**	**218.9**	**5.7**
Pennsylvania	6	8,955	15,485	73	13.4	13.2	284.1	5.5
New York	7	8,894	15,260	72	12.7	11.4	372.0	4.9
Washington	8	3,716	10,773	190	29.2	26.3	121.9	6.5
Indiana	9	5,784	9,692	68	13.7	13.3	140.3	5.8
New Jersey	10	4,880	8,204	68	11.2	11.9	175.0	5.4
North Carolina	11	3,883	7,808	101	12.5	9.8	150.3	5.5
Massachusetts	12	3,498	7,425	112	15.4	14.2	155.1	5.6
Louisiana	13	2,734	7,415	171	12.8	11.9	63.7	3.6
Wisconsin	14	3,607	6,590	83	12.0	13.0	114.9	5.3
Tennessee	15	2,716	5,567	105	13.4	10.3	102.5	5.3
Virginia	16	2,480	5,163	108	14.3	11.1	88.3	3.6
Georgia	17	2,723	4,981	83	10.5	9.7	106.1	4.3
Florida	18	2,294	4,965	116	13.4	10.8	129.9	3.0
Connecticut	19	2,687	4,886	82	16.2	14.9	103.5	7.1
Missouri	20	2,834	4,861	72	11.7	11.1	94.7	4.3
South Carolina	21	2,117	4,194	98	15.0	11.7	76.4	5.5
Minnesota	22	2,298	4,135	80	11.6	12.4	90.9	4.5
Alabama	23	2,061	4,024	95	13.1	11.0	71.1	4.6
Iowa	24	2,228	3,940	77	11.8	12.0	60.0	4.5
Kentucky	25	2,367	3,751	58	12.3	10.6	58.7	3.9
Oregon	26	1,498	2,801	87	14.8	14.5	58.7	4.7
Oklahoma	27	1,044	2,752	164	10.8	12.4	54.5	4.0
Kansas	28	1,158	2,678	131	10.1	12.4	47.2	4.3
Arkansas	29	1,086	2,524	132	13.6	10.5	40.8	4.3
Arizona	30	1,050	2,461	134	19.7	20.5	53.7	4.4
West Virginia	31	1,108	2,361	113	19.7	14.6	30.7	4.2
Maryland	32	1,327	2,348	77	11.0	10.8	53.8	2.6
Mississippi	33	1,111	2,066	86	10.4	8.2	36.9	3.7
Colorado	34	976	1,922	97	11.1	12.7	49.4	3.3
Nebraska	35	576	1,477	156	9.5	10.0	24.4	3.3
Utah	36	416	1,050	153	10.6	10.3	20.5	3.3
Rhode Island	37	540	1,018	88	13.4	12.0	24.9	5.8
New Hampshire	38	455	994	119	13.6	14.1	24.3	5.5
Maine	39	425	924	118	10.1	9.9	20.9	4.5
Delaware	40	346	852	146	9.4	13.5	15.1	6.1
Idaho	41	381	740	94	14.7	11.7	15.4	3.9
Alaska	42	393	711	81	36.3	34.1	6.3	3.3
Vermont	43	287	451	57	12.3	11.6	10.1	4.0
Montana	44	182	327	80	7.6	7.5	7.9	2.2
South Dakota	45	130	267	105	9.1	7.9	8.1	2.6
North Dakota	46	98	242	147	10.2	11.1	7.8	2.6
New Mexico	47	109	235	116	7.2	4.6	9.5	1.7
Hawaii	48	66	232	252	6.3	4.5	6.4	1.5
Nevada	49	70	205	192	13.1	10.1	5.4	1.2
Wyoming	50	43	180	320	5.6	4.4	5.1	2.1

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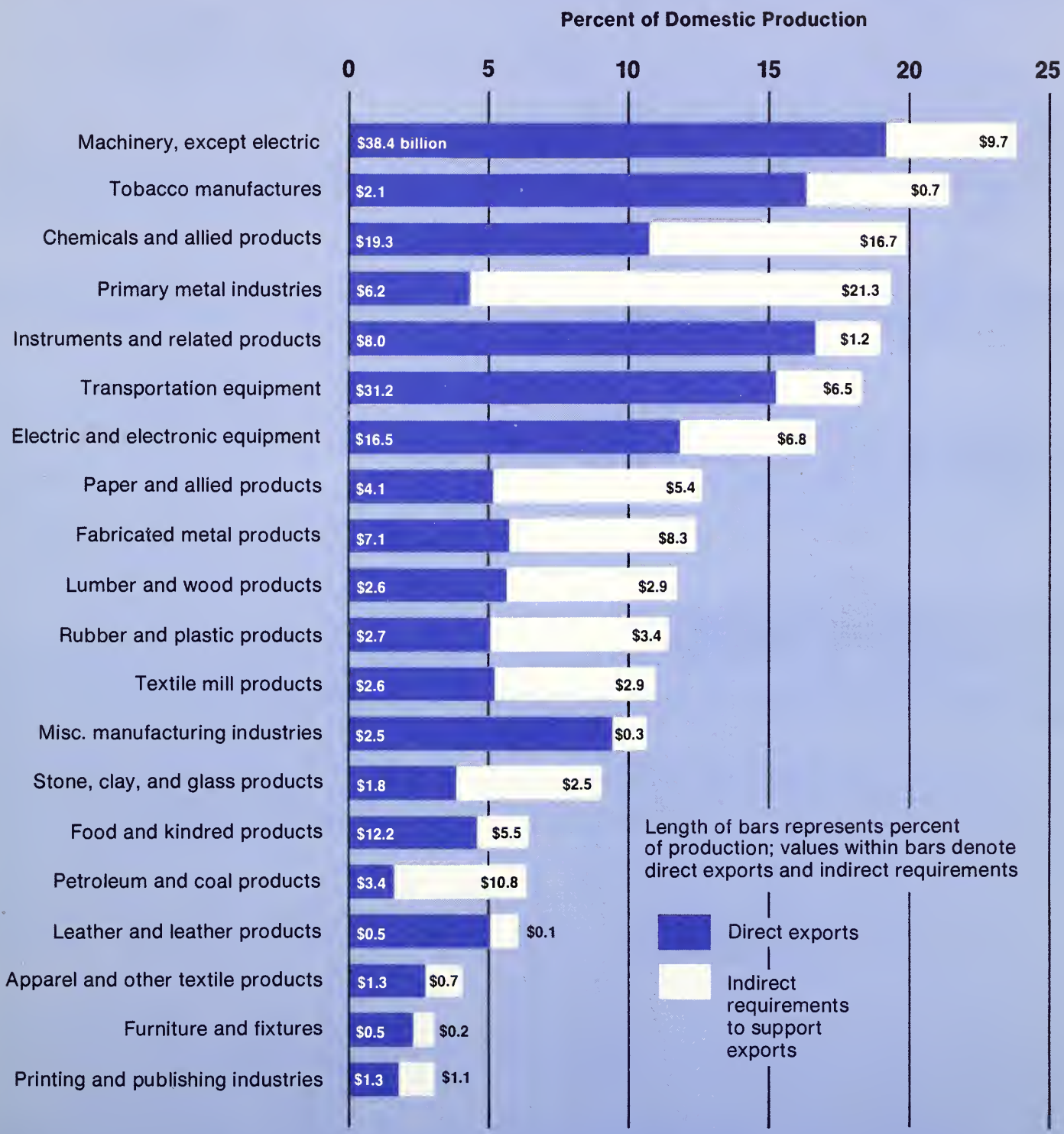
Exports of U.S. Manufacturing Industries Related to Domestic Production, 1981

Direct Exports and Indirect Requirements to Support Exports



Note: Percentages shown for each industry indicate the total relative impact of exports on the domestic economy, including direct exports and goods shipped from domestic establishments for use as inputs in manufactured products exported from other establishments. Such inputs are included in domestic production industry totals.

continued from page 1

out of every $3—was due to export-related shipments.

Feed grains led farm exports

Michigan's share of U.S. agricultural exports in FY 1982, including some manufactures of farm origin, totaled an estimated $753 million, over two times the FY 1977 value. Exports of feed grains amounted to $248 million. Overseas shipments of vegetables increased to $151 million, almost 5 times the FY 1977 value. Other commodities of substantial value were wheat and flour and soybeans.

The sharp growth in exports of agricultural products from FY 1977 to FY 1982 accounted for 48 percent of the rise in farm sales and added substantially to the income of Michigan farmers. In this period the export contribution to each dollar of the state's farm sales increased from 18 to 28 cents.

Leading iron ore exporter

Michigan led the nation in exports of iron ore which amounted to $130 million in 1981. That value represented a sharp increase from the 1977 value of $34 million. This strong value growth reflected expansion of production capacity and higher prices.

Michigan also shipped iron and steel scrap valued at an estimated $20 million in 1981 and small amounts of bromine, salt, and ferrosilicon.

Export employment significant

Michigan's $10.3 billion worth of manufactured exports provided direct employment for an estimated 74,400 workers in 1981. Those jobs constituted about 8 percent of the total manufacturing employment in the state. From 1977 to 1981 the number of workers engaged in the production of manufactures dropped, but employment directly related to exports advanced by about 9 percent. About two-thirds of these workers were concentrated in the transportation equipment and nonelectric machinery industries. These jobs accounted for 13 and 11 percent of the work force in those industries, respectively.

In addition, an estimated 68,400 jobs were required in the state to manufacture products used by other establishments in the United States as inputs for manufactures that were ultimately exported. Thus, an estimated 142,800 jobs in Michigan were directly or indirectly dependent on exports of manufactured goods. This was 14.6 percent of all manufacturing employment in the state.

Over one-half of the jobs dependent on manufactured exports were concentrated in the transportation equipment, nonelectric machinery, and fabricated metals industries. These jobs accounted for one out of six jobs in each of these industries.

An additional 76,100 jobs were generated in nonmanufacturing industries that supply materials and services supporting manufactured exports. Michigan's total employment related to manufactured exports amounted to 218,900 jobs, the seventh largest among the states.

It is estimated that Michigan's farm employment related to exports in 1982 amounted to 33,300 or about one out of every four farmers. This estimate assumes that the number of farmers dependent on exports corresponds to the ratio of exports to farm sales in the state. Depending on numerous variables, including the character of the product, mechanization, and degree of intensiveness of farming, it may somewhat understate or overstate the actual number dependent on exports.

STATE EXPORT REPORTS

This report is one of a series of 50 prepared by the Office of Trade and Industry Information /Trade Information and Analysis, International Trade Administration on exports from the individual states. Data on manufactured and agricultural exports are presented in tabular form for a series of years. In addition, recent information is included on state exports of fish, fish products, and minerals. The statistics on 1981 exports of manufactures by state were taken from *Origin of Exports of Manufactured Products, 1981 Annual Survey of Manufactures,* M81 (AS)-5, issued by the Bureau of the Census in May 1983. That publication can be ordered from the Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, D.C. 20233, or from any U.S. Department of Commerce District Office for $2.75 per copy. Data for earlier years were taken from similar Census reports now out of print.

The information on state shares of agricultural exports was taken from various issues of *Foreign Agricultural Trade of the United States* published by the U.S. Department of Agriculture. Special compilations on exports of minerals and fuels by state were provided by the Bureau of the Mines, U.S. Department of Interior, and by the Energy Information Administration, U.S. Department of Energy, and on fish and fishery products by National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

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